

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 85-112

WASTE DISCHARGE REQUIREMENTS FOR:

MICREL, INC., AND
PASTORIA LIMITED PARTNERSHIP, PEERY COMPANY,
SUNNYVALE,
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

1. Micrel, Inc. purchased the facility located at 639 Pastoria Avenue in Sunnyvale, California, from Siemens in November, 1981, (see site map, Attachment A). The property itself is owned by Pastoria Limited Partnership, Peery Company, 2560 Mission College Blvd suite 101, Santa Clara, CA 95050. Micrel, Inc., as the current tenant of the facility, and the Peery Company, as the current land-owner, are hereinafter referred to as the dischargers for the purposes of this Order. The facility at the site has been used for the manufacture of semiconductors since 1971. Briefly, the site history is as follows:
 - a. 1970-72: construction and operation of the original facility by Phil Shiota and Bob Zinn in 1970 under the name Advanced LSI.
 - b. 1972-75: business purchased by Litronix Co.; continued operating as Advanced LSI
 - c. 1977-Nov. 12, 1981: Siemens, purchased business, kept name of Advanced LSI
 - d. Nov 13, 1981 - present: Micrel Inc. purchased the business from Siemen's and obtained a new lease of the building. The facility was operated under the name of the Advanced LSI Technology - Wafer Fab Division of Micrel, Inc., until January, 1984, when the name changed to Micrel Wafer Fab, Inc.
2. In the fabrication of semiconductors at this facility, organic solvents and various acids are used for cleaning and etching the surface of silicone wafers. To facilitate the handling of waste solvents, an iron, 500-gallon underground solvent-waste storage tank was installed at the facility. In mid-1983 use of the underground tank was terminated, and the pipelines leading to it were capped. The tank was cleaned and emptied of all its contents in April, 1984, and was excavated for offsite disposal in May, 1985. It is believed that this tank and the related piping have acted as a significant source of subsurface contamination at the site.

3. In September, 1982, Micrel responded to the Board's Underground Leak Detection Program Facility Questionnaire. Since then, Micrel has conducted limited subsurface investigations. Proposal's for "Phase I" and "Phase II" investigations have been submitted to Board staff and have been approved, resulting in the initiation of subsurface sampling, including the construction and sampling of four shallow groundwater monitoring wells. A Technical Report for the Phase I investigation was submitted in July, 1984. The dischargers have also submitted results of the on-going Phase II investigation.
4. The site investigations have found the soil and groundwater at the site to be contaminated with organic solvents including TCE, TCA, PCE, dichloroethane, xylene, phenol, toluene, n-butyl acetate, and others. Concentrations of solvents in the soils have been found at percentage values, and in the groundwater at levels of several parts per million. This pollution poses a threat to the beneficial uses of waters of the state.
5. Both the vertical and lateral extent of groundwater pollution at this site have not yet been defined. Therefore, further studies and monitoring are required to define the extent of pollution and the degree of threat to beneficial uses of the affected water resources. These studies should lead to the development and implementation of a final containment and cleanup strategy which should address the entire plume, once it is defined.
6. In pursuing the subsurface investigation, Micrel representatives requested that Regional Board staff work solely with Micrel in resolving staff concerns, rather than bring the former site occupant, Siemens, directly into involvement with the Regional Board. Consequently, during early stages of the investigation, Regional Board staff worked solely with Micrel and did not request participation by Siemens. Copies of correspondence between Siemens and Micrel were submitted to Regional Board staff indicating Siemens' awareness of the ongoing subsurface investigation as of March 7, 1985. However, Siemens has recently been more formally involved, at the request of Regional Board staff, for the purposes of having all potentially responsible parties named in waste discharge requirements. Recent information received from Siemens dated September 13, 1985, indicates the existance of additional potentially responsible parties. It is the Board's intent to amend these requirements to include Siemens and/or other responsible parties in this Order at a later date. This will allow Regional Board staff, Siemens and other parties more time to resolve site history issues.
7. A vault designed to house an extraction well for interim containment and cleanup has been installed in the excavated pit where the former solvent waste tank was located. Pump tests will be conducted and utilized in designing this interim groundwater extraction strategy for the site. The dischargers have not yet submitted a treatment and disposal plan for the proposed extraction of groundwater.

8. The Board adopted a revised Water Quality Control Plan, (Basin Plan), for the San Francisco Bay Region on July 21, 1982. The Basin Plan contains water quality objectives for San Francisco Bay. The Basin Plan also contains water quality objectives for groundwater. The objectives include the maintenance of water quality and existing beneficial uses of these water resources.
9. The beneficial uses of the San Francisco Bay include:
 - a. Recreation
 - b. Fish migration and habitat
 - c. Habitat and resting for waterfowl and migratory birds
 - d. Industrial water supply
 - e. Aesthetic enjoyment
10. The existing and potential beneficial uses of the groundwater underlying the facility include:
 - a. Industrial process water supply
 - b. Industrial service supply
 - c. Domestic supply
 - d. Agricultural supply
11. The Board has notified the dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
12. This project constitutes a minor modification to land and as such is exempt from the provisions of the California Environmental Quality Act, (CEQA), in accordance with Section 15304 of the Resources Agency Guidelines.
13. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Dischargers, in order to meet the provisions in Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the groundwaters of the state is prohibited.
2. The discharge of wastes or hazardous materials through subsurface transport to surface waters in quantities or concentrations which will degrade water quality or adversely affect the beneficial uses is prohibited.

3. Activities associated with the subsurface investigation, (such as well installations), and cleanup, (such as groundwater pumping), which cause further spread of pollution, are prohibited.
4. Bypassing of wastewater from any wastewater treatment system to waters of the state is prohibited. If bypassing should occur, the dischargers shall notify this Board's Executive Officer immediately.

B. SPECIFICATIONS

1. The treatment or disposal of waste shall not create a nuisance as defined in Section 13050 (m) of the California Water Code.
2. Groundwater extracted for plume containment shall receive the treatment specified in an NPDES permit prior to discharge to waters of the State.
3. The vertical and lateral extent of pollution shall be defined at all times. Should monitoring results show evidence of plume migration, additional plume characterization shall be required.
4. The hydrogeologic conditions in all polluted aquifers and related areas shall be defined.
5. Additional migration of groundwater pollutants from the 639 Pastoria Avenue facility and offsite areas of the plume(s) shall be prevented.

C. PROVISIONS

1. The dischargers shall report to the Board by October 15, 1985 on the proposed method of groundwater treatment and discharge for the interim cleanup program identified in Finding 6. The dischargers shall file an NPDES Permit application if a discharge is proposed to waters of the State.
2. The dischargers shall report to the Board quarterly, commencing on February 1, 1986, on the effectiveness of the interim groundwater containment and cleanup program. These reports shall include both vertical and horizontal pollution concentration contour maps.

3. In order to comply with Specification B-3, the dischargers, to the extent responsible, shall meet the following compliance time schedule:

<u>Task</u>	<u>Completion Date</u>
a. Define the extent of groundwater pollution both on and off-site in the shallow water bearing zone, (ie. 0-30').	February 1, 1986
b. Determine if groundwater pollution exists below the shallow water bearing zones, (ie. zones below the 30' depth specified above).	January 1, 1986
c. If contaminated below the 30' water bearing zone, define the lateral and vertical extent of pollution both on and off-site for the entire plume.	March 1, 1986

4. Documentation of compliance with Specification B.4 shall be provided to the Board through quarterly reports, commencing on February 1, 1986. These reports shall include the following, updated quarterly:

- a. Piezometric surface maps for all water bearing zones.
- b. Cross-sectional geologic maps
- c. Geologic logs of new soil borings

5. In order to comply with Specification B.5, the dischargers shall submit a report to the Board by May 1, 1986 which contains a proposal for full containment of the entire groundwater pollutant plume. This report shall be based upon the results of pollutant plume monitoring necessary for compliance with Specifications B.3 and B.4 listed above.

6. All samples shall be analyzed by laboratories using approved EPA methods for the type of analyses to be performed. All laboratories shall maintain quality assurance/control records for Board review.

7. The dischargers shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:
 - a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
 - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.
8. The dischargers shall file a report on any significant changes in the nature, quantity, or transport of polluted groundwater, or site occupancy and ownership associated with the facility described in this Order.
9. The dischargers shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
10. The Board will review this Order periodically and may revise the requirements when necessary.

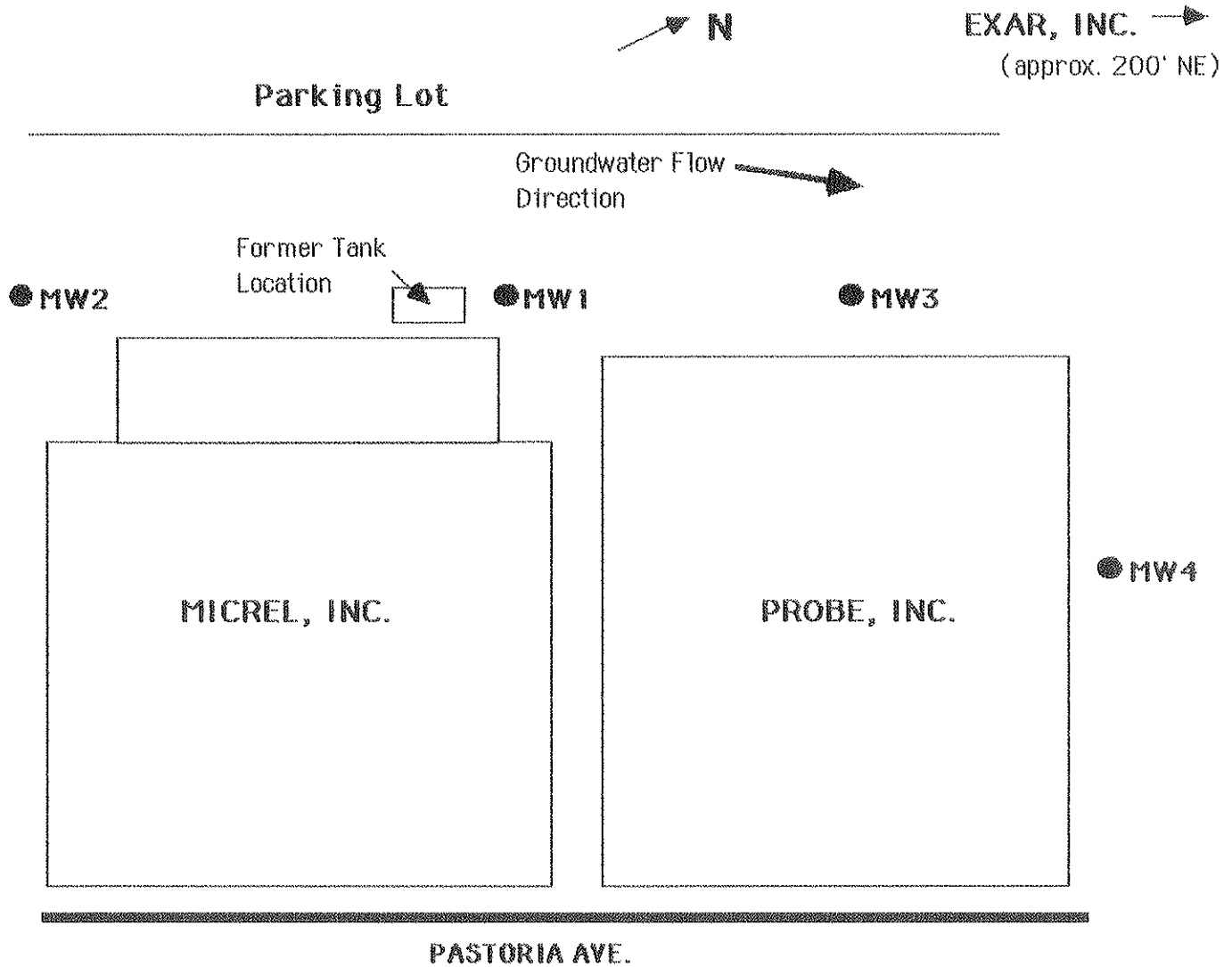
I, Roger B. James, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on September 18, 1985.

Richard H. Whitel

Roger B. James
Executive Officer

Attachment: Site Map

MICREL, INC. – SITE MAP



KEY:

● = Monitoring well

1 inch = 40 feet